Water Pollution Control Advisory Council (WPCAC) Meeting
February 28, 2002 9:30 a.m.-2:00 p.m.
Room 111 Metcalf Building

Attendees:

Council Members:
Richard Parks, Fishing Outfitters Association of MT
Barbara Butler, Billings Solid Waste Division
Don Halverson, United Association of Plumbers & Pipefitters
Doug Parker, ASARCO
Dan Sullivan, Dept. of Agriculture
Jack Stults, Dept. of Natural Resources & Conservation (DNRC)
John Wilson, Montana Trout Unlimited

Other Attendees:
Bob Raisch, Dept. of Environmental Quality (DEQ)
Bonnie Lovelace, DEQ
Michael Suplee, DEQ
Rosie Sada, DEQ
Abe Horpestad, DEQ
Chris Levine, DEQ
Art Compton, DEQ
Brian Heckenberger, DEQ
Harmon Ranney, MCBNGA
Greg Petruska, Fidelity Exploration & Production Co.
Gene Onacko Jr., BIA Rocky MT. Regional Office
Mike Bergstrom, Fidelity Exploration & Production Co.
Julie DalSoglio, US EPA Montana Office
Bill Schafer, Schafer Limited LLC
Don Allen, WETA
Gail Abercrombie, MT Petroleum Assn.
Steve Gilbert, Northern Plains/ FY Irrigators
Brenda Lindlief Hall, Tongue River Water Users
Jim Domino, DNRC

Next Meeting, Changes in Agenda and Approval of Minutes

Bob Raisch called the WPCAC meeting to order at 9:30 a.m. The council is reminded that the next WPCAC meeting is scheduled for May 9, 2002 and one agenda item that will be discussed is the three-year review for the New World Mining District temporary standards. It was proposed and approved to move the last agenda item to an earlier time. The council approved the minutes from the December 13, 2001 meeting.

Storm Water Construction General Permit

Bonnie Lovelace said that under the current rule all general permits must be provided to the WPCAC members by mail. There are currently a dozen general permits with five-year terms that periodically come up for renewal. Would the council prefer to see these general permits on the agenda or just to receive the notice as they come up for review?

Doug Parker asked what other public participation is there at this point in the permit? Would it be presented during the final stages of the process or during the earlier stages before the public process?

Bonnie Lovelace said that any individual or general permit is subject to the normal public notice process. Historically notices have been sent out to the council members without being on the agenda. Recently they have been presented as an agenda item to the council when they are ready for the public notice process. It would be possible to present them to the council when they are prepared for internal review as long as it does not lead to two public review processes.

John Wilson said that he would prefer to see them when they went through the department process and have a summary sheet indicating whether it is a renewal or a new permit and any changes that are being proposed. The council could then decide whether or not to present it as an agenda item. If possible, once the public comment period closed, have the public comments mailed to the council.

Bonnie Lovelace said that public comments are addressed with individual letters and not compiled into a final summary sheet. The letters could be copied and made available to the council.

Doug Parker asked if there were any associated MEPA processes with any of these permits?

Bonnie Lovelace said that the department attaches any Environmental Assessment (EA) and any Environmental Impact Statements (EIS).

Richard Parks said that it would be advisable to have the council notified of all general permits when they go out for departmental review. Included with the permit should be a brief background on what is initiating the review. The permits should be on the agenda only once at the initial notification. These permits should automatically be on the agenda of the first meeting after being notified of them. Any member who wishes to see the public comments could come forward individually and ask for that information.

Bob Raisch said that depending on the timing of the permit and the next council meeting, a special meeting could be held to discuss the permit if it is deemed critical.

Bonnie Lovelace said that it would be possible to inform the council at the time of the internal review. This will be in addition to the public review process. These general permits will have a fact sheet included with it that will act as a summary sheet for the permit.

The permit under consideration today is a non-routine renewal of the storm water construction general permit. Previously the triggers for getting this permit were five acres or more of disturbance with potential to discharge storm water and construction disturbance occurring within a hundred feet of stream. Phase II Storm Water and Legislative activity have brought about changes to this permit. The legislative activities have directed the department to create a notice of intent process for construction projects to simplify the upfront process. Pollution prevention plans will be submitted to the department with the notice of intent. Construction does not need to wait for authorization from the department before starting. Once the process is in place there will be more field visits to ensure compliance. Under the Phase II Storm Water Program, regulations will be in place to lower the threshold for needing a permit. Once the rules are adopted one acre or more of disturbance with potential to discharge storm water will require a permit. Phase II Storm Water rules still have to go through the rule making process and will hopefully be initiated this summer and adopted later this year. The Phase II Storm Water Program changes will have to be done through a rulemaking. The Phase II Storm Water Program MS-4 permit for municipalities, counties and other facilities will be done at the same time as the storm water rules. The MS-4 permit will affect about eight communities.

John Wilson asked if DEQ has any authority to approve, disapprove or condition any of the storm water plans? There is a paragraph that says DEQ does not have any authority to approve, disapprove or condition a Storm Water Pollution Prevention Plan (SWPP).

Bonnie Lovelace said that there is no state action associated with this permit. Entities who submit a SWPP can start working without approval. If looking at the plan or on the ground inspection reveals something, DEQ does have authority to ask that it be addressed differently. The paragraph will be looked at and clarified.

Richard Parks said that construction projects do tend to spread weeds. If there are to be more people in the field, inspectors should look for the spreading of these weeds. The general public is responsible for the removal of the weeds that have been spread by construction projects.

Bonnie Lovelace said that the weed issue would be raised with the Department of Transportation and the Contractors Association at the upcoming training course.

John Wilson asked how many new compliance staff would be added? Would permit writers be field inspectors?

Bonnie Lovelace said that there would be an addition of one FTE position to the Storm Water Program, two toward other permitting, and one Administrative Assistance. There will be a total of three and a half FTE positions for the Storm Water Program. As part of the job descriptions all permit writers are also field inspectors.

Proposed Classifications for Ephemeral Streams, Ditches and Saline Lakes

Chris Levine said that the official draft notice to go to the board for rule making is a combination of two rules. Included in this rule are the new classifications and classification standards and the Clark Fork River nutrient standards. The Secretary of State's Office felt that the two rule notices should be combined because they address the same subchapter of the administrative rules.

If the new classifications and standards become a rule, it will not automatically come into affect and automatically apply to all streams, ditches and saline lakes. A "use attainability analysis" (UAA) must be done prior to reclassifying any waterbody. Each specific waterbody will have to be identified and subjected to a UAA before they go into these classifications. These are not stream specific classifications but a general place holding places for waterbodies.

Entire watersheds are generally given the same stream classification. This does not work well for all the ephemeral streams, seasonal small ponds and lakes and ditches in the watershed. The Water Quality Act (WQA) under section 75-5-301(1) it directs the board to classify streams with sporadic flow for their specific uses. Many small communities have wastewater lagoons that discharge to small streams, ephemeral channels and similar waterbodies that are not appropriately classified for their specific uses. These small wastewater lagoons do not treat ammonia well and the cost to upgrade to treat ammonia ranges from a quarter million to four million dollars. The proposed classifications and standards are intended to acknowledge that there are certain circumstances where state waters are not able to support all the uses that they are presently classified to support. On some of these waterbodies the primary uses are support of amphibians, reptiles, wildlife and agriculture. Usually fish are not present in these waters.

The proposed classifications are two ephemeral streams (E-1 and E-2); two ditches (D-1 and D-2) three seasonal or semi permanent lakes and ponds (E-3, E-4 and E-5); and a low or sporadic flow stream (F-1). The UAA is a scientific analysis of the conditions in a waterbody that checks the chemical, physical and biological factors that affect use attainability. Once the UAA is completed and a determination is made it needs to be presented to WPCAC, go through the public comment process and then be adopted by BER as a new rule placing this stream into a new classification. Any one can request DEQ to remove a use or reduce the water quality standards for a waterbody. If DEQ agrees with the request, DEQ can complete a UAA on that waterbody. If DEQ disagrees, the concerned party could petition the BER for rulemaking to require DEQ to do a UAA.

Doug Parker asked if the department has done any UAAs? Does the department have an idea of what time, cost and manpower is involved in this process?

Chris Levine said that the department has not yet done a UAA. The UAA can quite simply be a photo documentation or a stream walk that could be done in one to two days. The UAA could also become an extensive biological, chemical and physical analysis. Cost could range from a few person days with a write up, to a years worth of monitoring and analysis. DEQ has spent a great deal of time considering these classification changes, the potential impacts of these changes and how the UAA will be done.

Richard Parks said that it appears that a lot of this information is the same information that would be accumulated to do the TMDL process. Is there an overlapping of data sets required to make these determinations?

Chris Levine said that the data sets would be similar, unfortunately since many of these are unimpaired waterbodies they are not on the list of waterbodies needing a TMDL. Many TMDLs do not gather data on ephemeral streams. The staff gathering the data would be the same for both objectives.

John Wilson asked how the department would handle an ephemeral stream classified as an E-1 or E-2 that empties potentially polluted water into a B-1 stream that is impaired?

Chris Levine said that in the rules under each classification, it states that downstream uses must be fully maintained. The standards for these classifications are to ensure the protection of the downstream uses and state that the WQB-7 standards for carcinogens and parameters with a bioconcentration factor greater than 300 apply. If discharges into a waterbody that is classified under this new system will have harmful effect to waters downstream, then that waterbody cannot be reclassified. Ammonia has been removed as a standard for the new classifications that do not have aquatic life. Ammonia can be very harmful to aquatic life but dissipates moderately quickly. Ditches that reconnect with state waters are considered state water. Ditches and ponds that are used only for the transport and storage of a waste are not state waters.

Barb Butler said that all agriculture ditches out of the Yellowstone River near Laurel go into the Billings storm water system. The Phase II Storm Water Program regulations may be different than these proposed classification standards. There is some concern with lowering the standards in ditches because there are currently problems with meeting standards and may they be affected further with these changes. It would have to be addressed in the UAA.

Chris Levine said that the seasonal and semi permanent ponds have a split proposed at 7000 µS/cm for electrical conductivity (EC). Any waters above 7000 µS/cm EC is not likely to support aquatic life. In ponds or lakes with an EC below 7000 µS/cm the chronic and acute standards will apply. In most of these situations the human health criteria are not included as part of the standards.

John Wilson asked if a small stream were small due to diversions or appropriations outside the stream, would it be reclassified? It is unclear in the notice and should be clarified.

Chris Levine said that it would not be reclassified because of a diversion. The UAA will look at small streams to see if fish migrate in them.

Doug Parker said that DEQ should develop some guidance or policy concerning what will trigger a UAA to be done.

Proposed Nutrient Standards for the Clark Fork River

Mike Suplee said that after meetings with the Voluntary Nutrient Reduction Plan (VNRP) Subcommittee of the Tri-state Council and numerous signatories, it was decided to use the total nitrogen and phosphorus values as found in the Clark Fork VNRP agreement. These proposed standards are in the packet under rule X-site specific standards. These standards are supplemental to existing water quality standards. The only difference from the previous packet and this one is some minor changes in the definitions. These standards would apply from the confluence with Warm Springs Creek to the confluence with Flathead River. The signatories of the VNRP are pleased with this approach and have already begun to take steps to meet these standards.

Doug Parker asked if there were small municipalities not included in the VNRP agreement that will be directly affected by these changes?

Bob Raisch said that the VNRP as it is written with the reductions required and a fifteen percent decrease in nonpoint sources (NPS) is suppose to achieve the targets assuming there is no growth. There is a fear that smaller municipalities will increase their discharges up to permit limits and offset the benefits achieved by the four VNRP signatories. The smaller municipalities would be affected by having their discharge limits locked in and they would not be allowed to increase with population growth. A few of these smaller dischargers may have to reduce the amount they discharge.

John Wilson asked why the standards stop at the Flathead River and not extend to the border?

Mike Suplee said that the Flathead River changes to a large river where benthic algae problems are no longer an issue. There is a concern of the lake downstream. There is a border agreement between Idaho and Montana that will address the actual loads of nitrogen and phosphorus to Pend Oreille Lake.

Doug Parker asked what the schedule was for rule making on these two issues in the packet?

Mike Suplee said that the request for rule making would be done at the March BER meeting. During the September BER meeting it should be passed into rule. There will be one public hearing addressing both subjects at the same time. If the board initiated only one part, a revised notice would be written leaving off the section not approved by the board.

Proposed Standards for Salinity and Sodium Absorption Ratio (SAR) for the Tongue and Powder Rivers
Department of Environmental Quality Proposal

Abe Horpestad said that in the Coal Bed Methane (CBM) area, narrative standards are currently being relied upon. These narrative standards are difficult to transfer into a permit limit. DEQ is recommending numerical standards to be adopted. This will ensure more consistency in the permits issued; help determine what the impacts will be before they will occur and if there is some assimilative capacity.

The Tongue River has very low salinity and SAR. The tributaries of the Tongue River naturally have a higher salinity level. A survey was done to determine what types of crops were grown in this area and how they were irrigated. The larger plots of land are mainly being irrigated by sprinklers, flood and furrow methods. A list of the types of crops being grown in the area has been produced and it also shows the percent changes in yield at various levels of salinity in the irrigation water.

In March the department will ask the BER for recommendations as to which crops should be protected, what level they should be protected at and how the allocation problem/opportunity should be dealt with. As to how to decide what crops will be protected, the Water Quality Act is currently based on the assumption that it will protect present and reasonably anticipated uses but not to what degree. With

these recommendations a draft rule will be written, presented to WPCAC in May and then go to the board to request initiation of rule making. To help determine assimilative capacity distribution, the classical literature relating salinity to crop yields will be used. This literature is based on field trials and lab test that measured the crop yield resulting from irrigation water with different salinity and the resulting salinity of the ground waters. The yield decrease is in addition to other factors that may cause a decrease in crop yield. Once the BER has picked a maximum allowable level of EC at Miles City by choosing a crop to be protected and the level of protection, a spread sheet has been designed that will allocate the increase amongst the vary entities on a percentage basis determined by BER. These allocations are DEQ's estimate of the potently developable CBM wells in each jurisdiction as a percentage. With the EC limits set by BER it is possible to calculate the percentage of crop yield with various leaching fractions throughout the river basin for all crop type. Under the current narrative standards, each permit will have to go through this process to determine what the limits will be. DEQ wants numerical standards and will recommend to the BER to use the relationship between salinity and SAR will have no impact on infiltration. The crop yield value due to salinity does not include affects on germination and seedling emergence. These calculations also assume that the leaching fraction is uniform throughout the field and is the same for all types of soil. The model requires an increase in the leaching fractions to improve crop yield, which means additional water must be available.

John Wilson asked if there were any trend data from Wyoming in terms of water quality?

Abe Horpestad said that there is no trend data for the Tongue River. For the Powder River there is some trend data that indicates since 1990 there has been a very significant decrease in the salinity of the river.

Doug Parker asked how the department was viewing this from the TMDL perspective?

Abe Horpestad said that the department has combined the CBM standards and TMDL efforts together. The deadline for the TMDL in the Tongue and Powder River area had been moved to the end of this year.

Steve Gilbert asked if the department knows exactly what is needed to protect water quality and at what percentage? The Tongue River Irrigators are not concerned necessarily about numeric standards as long as they can be sure that their crops will not be affected by these standards. They do not want any reduction in their crops, which would lead to a reduction in pay. They feel that they are entitled to as much as they have had in the past in terms of crop yield and income. What is the schedule of events in terms of representing individual interest?

Richard Parks said that as an advisory council, all comments from these meetings become part of the general record but have no decision authority. Any comments should be given to Bob Raisch. WPCAC must look at the issues first before the board can put out a notice and start the public process. There will be at least one additional opportunity to comment formally before any rules are adopted. The council can take a vote as to whether a process should be initiated to adopt a standard and submit that as their recommendation.

Abe Horpestad said that this issue is very complex and covers more than what has been discussed here. Discharges in January and February have little impact, unless stored in the reservoir, to irrigated agriculture. Increasing discharges during the winter months presents the possibility of having ice-jams during high flow years moving onto the fields and possibly causing problems with crop yield. It is DEQ's belief that irrigation limitations will protect aquatic life, but more work will be done to ensure this it true. There are also concerns with sub irrigation and riparian vegetation.

Jack Stults said that there has been some concern with the reservoir becoming a saline sink. Has DEQ looked into this possibility? At this point DEQ is not ready to put out a number for the standards but in the EIS an SAR of twelve is mentioned.

Abe Horpestad said that there have been some preliminary calculations done. The reservoir has a large volume of water and gets enough low salinity water that the CBM development does not appear to have a large impact on the reservoir. The numbers mentioned in the EIS are strictly for illustrative purposes to tie salinity to SAR. There is also the potential direct toxicity effect of increased sodium to consider. Preliminary studies indicate that this is not likely to be a problem.

Montana Coalbed Natural Gas Alliance Position

Bill Schafer said that natural gas or methane is held in coal seams. There are various natural methods that will release the methane. One of these ways is to depressurize the ground water within the coal seam through pumping some of the water out. The methane will form bubbles and can be collected through the outer well casing of the pump. This is a big issue because the conception is water from the coal seams is "bad" water. Produced water has slightly elevated TDS levels, low calcium and magnesium levels and high levels of sodium. This water becomes this way through a natural evolutionary process. Waters that recharges the coal seams moves through deposits and soils picking up naturally occurring calcium, magnesium and sulfate based salts. As this water goes deeper into the weathered soils, and bedrock systems the calcium and magnesium is pulled out of the water by the clay and exchanged for sodium. When it goes through the coal seam sulfate is removed through a process called sulfate reduction and is replaced with bicarbonate. What makes this water so different from most other ground and surface water in these areas is the very low concentrations of calcium, magnesium and sulfate and higher concentrations of bicarbonate. For domestic use, CBM water meets all primary drinking water standards but fails to meet secondary standards for TDS. CBM waters may also have issues with iron and manganese standards, which is similar to many ground waters. Earlier studies during the coal development stages recognize that water from coal seams is often a preferred source of domestic water supply in Eastern Montana because of the generally lower TDS levels than other waters in the area. For livestock and wildlife uses, CBM water easily meets the salinity requirements in the guidelines for livestock water set by National Academy of Sciences (NAS). CBM water has ammonia and fluoride levels that are higher than the standards for aquatic life. Salinity and sodium absorption ratio (SAR) are two of the main concerns of using CBM water for irrigation. The numerous guidelines that have been developed for irrigation water are only guidelines and there is no immediate response of crops and soil to a change in irrigation water. The changes to soil and crops happen over several growing periods. The guidelines are structured to illustrate where there will be different levels of restrictions on use of the water. There are management techniques available to deal with subtle changes in water quality. The guidelines are set to address a global array of soils and crops. The primary effect of salinity or EC of soluble salts in the irrigation water is on the crops by creating a physiological condition similar to drought. The range of water quality in the Powder River seventy five percent of the time is around two dS/m EC. Alfalfa is a moderately sensitive crop and is only potentially affected at this EC level. SAR levels do not have a direct affect on crops but can affect soils that are high in clay. Whether clay is pulled together or disperses creating a permeability problem depends on the salinity of the water and the types of ions being put in the soil. Sodium is a large ion and will cause permeability problems. Setting standards that will prevent this occurrence may prevent discharging clean water or storm water. Many Montana soils have naturally high sodium levels in them. Irrigation water with no to slight salinity or permeability hazards are probably acceptable to use for long terms on crops and soils. Irrigation water with moderate to high salinity or permeability hazards can be used for short duration but will require a change in management techniques after prolonged use. The leaching fraction is a very important practice and should be at least twenty to thirty percent to prevent an evaporative accumulation of salts and sodium in the soil. CBM water has been successfully used on coarse texture soils with no clay content. Moderately coarse texture soils can use CBM water with chemical additives, irrigate more frequently with smaller

applications and other management practices. According to the Hanson (Ayers and Westcot) Criteria 0.7 to 3 EC dS/m has slight to moderate restrictions. If the SAR is below three there will be no adverse affect on the use of the water. The higher the salinity the higher the allowable SAR will be. According to an October DEQ document the SAR should be an equation. This approach is very conservative except with very saline waters but may have some compliance issues. Water sampling data on the Powder River indicated that the water during low flow is often above the proposed in-stream standards and lowest salinity levels in the water does not meet the permeability standards. Criterion should be the same throughout similar reaches with the same beneficial uses. DEQ's proposed criterion for EC will be different for different reaches. The appropriate way to deal with a waste load allocation should be through a TMDL process. EC should be linked with SAR but DEQ's proposed numbers should be less conservative to prevent having compliance issues. The proposed criteria fail to address the chronic effect of irrigation water on crops and soils. The DEQ proposed numeric standards are inconsistent with available research and irrigation water quality guidance. The narrative standards are workable and will protect irrigation water use with the use of written specific guidelines that will keep the permits consistent. The permit guidance should be based on long term affects on irrigation and not on low flow conditions. The permit limits for EC and SAR should be consistent throughout the entire basin and should be seasonal except for reservoirs.

Richard Parks said that to ensure that everyone was clear on the final proposals, the department is proposing to develop some numeric standards but Montana Coalbed Natural Gas Alliance is suggesting keeping the narrative standards.

Steve Gilbert said that he is here to represent the Tongue and Yellowstone Irrigators and the Northern Planes Resource Council. Both of these groups strongly support numeric standards because it eliminates whim and ensures consistency. Irrigators cannot base operation on what might happen over five years. It is critical that the acute and low flow issues are considered. It is possible that to put an irrigator out of business by forcing them use unfavorable water at a certain time because that is when it is available. Under these circumstances, irrigators will dispute Bill Schafer's ideas of chronic and low flow standards. There has to be standards based on numbers and flows. A farmer or rancher cannot afford one season of bad water on already potentially marginal soils and any percentage of lost crops. There is absolutely no reason these people should have to suffer reduced water quality based on an industry that is new to the area and is asking for the ability to pollute those waters.

Doug Parker asked how other places are dealing with the regulatory issues? Are there federal standards or do other states have standards? Is there precedence for using numeric standards? What kind of standards are other states using?

Abe Horpestad said that for CBM water there are no federal standards and other states do not have numeric standards. Most places where irrigation is taking place with salty water involves new irrigation of higher valued crops with more crops per year. These areas can afford chemical amendments. Wyoming is being pressured to consider adopting numeric standards.

Art Compton said that the numeric standards the department is proposing is in response to anticipated CBM development. The states of New Mexico, Utah and Colorado reinject CBM water back into the coal seams and do not feel the need to have numeric standards.

Brenda Lindlief Hall said that, on behalf of the Tongue River Water User Association, they would like it known that they support numeric water quality standards. The standards must also look at the possibility of irrigators changing the type of crops being grown. The water quality data from the past two years show an increase in EC and SAR levels. The Tongue River Water Users would like to ensure that what has been their historic water quality would be maintained.

Bill Schafer said that it is important to look at all types of crops and where they can possibly be grown in the area. Most truck crops are generally successfully grown in course soils. Most of these crops will be aggressively irrigated to be commercially successful. The standards must be dealt with on a very site-specific bases and understand what the potential effects are. It should not lead to blindly setting standards that are developed for a much broader range of conditions than what is present in Montana. This should speak in favor, for now, to keep with the narrative standards. A permit writer can be specific using narrative standards and appropriate guidelines.

Richard Parks said in most cases it is preferred to have a numeric standard based on sound science to ensure that the permits are consistent and fair to all. The question is whether there should be narrative or numeric standards. To protect all the irrigators, numeric defendable standards should be in place.

John Wilson said that he would like to make a motion to advise the Board of Environmental Review to adopt a proposed rule that has numeric standards that would protect existing beneficial uses.

Don Halverson said he seconded the motion. It does not appear that industry should have a problem with the proposal and it protects the water and water users.

Doug Parker said that it is premature to offer the board advice without having an actual proposal that is ready to go forward with rulemaking. There is not enough information yet to make a decision.

Dan Sullivan said that he is in support of maintaining existing uses with emphasis on irrigators. May be best to have more analysis but is not opposed to numeric standards.

Jack Stults said that he supports the numeric standards because of the multiple jurisdictions involved. It will be easier to defend these standards.

Richard Parks said that he supports the numeric standards because of the constraints placed on conditioning permits by the legislation stating that without numeric standards a permit cannot be assured compliance.

A vote was taken on the motion: five votes in favor of the motion and one vote opposed to the motion.

Richard Parks adjourned the meeting at 2:00 p.m.